



Left:—This is the way the arid country looked before Federal irrigation was installed. Right:—The foreground of this picture shows the appearance of land before the application of water; the middle of the picture portrays irrigated farms, while in the distance can be seen the mountains.

## Uncle Sam's Irrigation Projects—Past, Present and Future

By H. O. BISHOP

WHILE it is true that both the Republican and Democratic parties, at their national conventions, sidestepped, straddled and pussyfooted on the subject of liquor irrigation, it is equally true and commendable that both parties came out clear, clean, flatfooted and open and aboveboard in favor of a continuation of water irrigation for the arid and semi-arid lands of the unparalleled West.

Here is the Democratic platform plank in regard to reclamation work: "We favor ample appropriations for the continuation and extension of this great work of home building and internal improvement along the same general lines, to the end that all practical projects shall be built, and waters now running to waste shall be made to provide homes and add to the food supply, power resources, and taxable property, with the government ultimately reimbursed for the entire outlay."

With but slightly changed phraseology, the Republicans assert their belief in the continuance of irrigation development in the following party platform plank: "We favor a fixed and comprehensive policy of reclamation to increase national wealth and production."

"We recognize in the development of reclamation through Federal action, with its increase of production and taxable wealth, a safeguard for the nation."

"We commend to Congress a policy to reclaim lands and the establishment of a fixed national policy of development of natural resources in relation to reclamation through the now designated government agencies."

With such substantial and understandable timber in both platforms it is reasonable to assume that no matter which party wins the coming election, the members of Congress will feel in duty bound to enact the necessary legislation and appropriate the required funds to inaugurate a broad reclamation program that will make it possible for as many acres of land in the dry sections of the country to be irrigated and brought into a high state of cultivation as the available water supply will warrant. To carry out this plan satisfactorily will require an appropriation of \$250,000,000. This does not mean, however, as many people suppose, that the taxpayers of the country will be called upon to donate this amount of money for these vast projects. On the contrary, every dollar thus appropriated will be returned to the Treasury of the United States within a period of 20 years from the time of the taking up of the land by the settlers.

As a matter of fact Senator Wesley Jones, of Washington, introduced a bill during the last session of Congress providing for the above program and appropriation of the desired \$250,000,000. That bill is still on the Senate calendar and will doubtless receive prompt attention upon the reconvening of Congress next December. The Jones Bill reads:

"That for the purpose of carrying on and completing irrigation projects and units thereof heretofore begun or surveyed, estimated for and approved but not begun for lack of funds, and for the investigation, commencement, and completion of such new projects as may be deemed feasible and desirable to undertake, and that can be completed within the limit of the reclamation fund as increased by the amount herein provided, there is hereby authorized to be appropriated and placed in the reclamation fund, from time to time as estimates are submitted therefor, the sum of \$250,000,000 to be expended under the terms and conditions of the act commonly known as the Reclamation Act and acts amendatory thereof, and to be repaid as is by said act and amendments thereto provided.

"That in the expenditure of said reclamation fund and in the undertaking of new projects the Secretary of the Interior is authorized and directed to enter into such agreements for co-operation with states, counties, duly authorized irrigation districts and municipalities as he may deem wise and advantageous, and preference shall be given by him to those new projects in states where substantial co-operation can be had, if otherwise feasible and desirable."

reclamation projects is just about double the average yield from non-irrigated lands in the country at large. The larger product obtainable per acre from irrigated lands justifies and permits a more careful intensive cultivation which, with a

favorable climate and controllable water supply, yields more positive results than the same care in the humid region.

This means that as much product may be obtained from a 40-acre tract under irrigation as from the average 80-acre tract in humid sections. This, of course, requires more labor per acre, but much less labor in proportion to product. It permits and encourages intensive cultivation and smaller holdings and consequently greater centralization of population. The result is that the isolation of country life is to a large extent eliminated, as the irrigating farmer will have twice as many neighbors within a given radius as his prototype in the humid regions. The social advantages thus obtained react upon the character of the people, the communities and other conditions characteristic of irrigated regions, with a similar effect.

Co-operation with his neighbors is forced upon the irrigator because it is usually impracticable for him to irrigate his land without such co-operation, the feasible irrigation projects usually being in tracts of many thousands of acres accommodating thousands of families and giving rise to towns and villages. This condition stimulates the civic conscience and attention to public affairs of common interest, so that the local governments that grow up under such conditions are ordinarily of a superior order and controlled by a superior intelligence on the part of the population living thereunder.

Arthur P. Davis, the director and chief engineer of the United States Reclamation Service, is admittedly the best informed man in America on the subject of reclaiming land by irrigation. Here is the comprehensive way in which this irrigation genius sums up the great reclamation work done thus far by the Federal Government: "The full importance of national irrigation cannot be measured in dollars and cents. In the building of new commonwealths in the arid West the government is utilizing largely its own undeveloped resources. It is creating opportunities for its citizens to establish themselves in permanent homes in which patriotism, loyalty and civic pride are bred and fostered. The primary purpose of the law was to create homes, and it is not denied that its purpose has been fulfilled richly and abundantly. Viewed from this standpoint, national reclamation has amply justified all its exponents declared for it."

"Since 1902 the Reclamation Service has constructed the irrigation system completely to supply 1,780,000 acres of land. Also the capacious reservoirs of the government are furnishing a supplemental supply of stored water to a million additional acres in other projects, or a grand total of 2,780,000 acres."

"On the government project lands are 40,000 families in independent homes. The population in cities, towns and villages in these government projects has been increased by an equal number of families; that is to say, on the 1,780,000 acres reclaimed there are now profitably employed and satisfactorily housed 400,000 people. The arguments for increasing and making permanent the nation's vitality, prosperity, and growth by creating more homes of this kind were never more forcible and unanswerable than just now. American people can not rightly claim to have measured up to their opportunity until the deserts of the West and the unused agricultural lands of the remainder of the nation have been replaced by vistas of prosperous farmsteads."

"Measured by the yardstick of the financier—the dollar—the results of the Reclamation Service activities are interesting."

"As a creator of wealth, its service to the nation and the state has been as great as in its principal task of homemaking. Out of the unin-

There is not the least question but that agriculture in the arid region where irrigation is feasible has several important advantages over that in the humid region. The soils of the arid region because of the very nature of the case have generally not been leached of their mineral plant foods as have those in the humid regions, and therefore they are usually much richer in this respect being seldom or never acid, as are soils in the humid region. At times this quality has the disadvantage of leaving the arid lands charged with hurtful alkalies that seldom remain in the humid region because of their solubility, but where the injurious salts do not predominate the general principle of abundance of mineral plant food obtains and constitutes a distinct advantage for soils of the arid region over those of humid regions.

There is much advantage in being able to apply water to growing crops at just the time and in just the quantity needed and to withhold it at will. Where the water supply is ample this constitutes a very important advantage in arid regions.

Another striking advantage is the preponderance of clear days in an arid region, where the absence of rainy and cloudy weather affords a much larger percentage of sunshine than is found in humid regions. As sunlight is one of the most important essentials of healthy plant growth, this advantage is exceedingly valuable. Resulting from these advantages, it appears that the average gross product of agricultural crops, on



This map shows the location of all Federal irrigation projects developed up to the present time.